

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Driven polarons and bipolarons** PAVEL KORNILOVICH, HP Inc.  
Oregon State University — Small lattice polarons and bipolarons driven by strong external electric fields are considered. The time-dependent Schroedinger equation is integrated directly in time domain. The field agitates the ions both directly and through modulation of electron density. It is found that when the field is in resonance with the ion frequency, the (bi)polaron is liberated from its self-induced trap and the tunneling frequency increases exponentially. This implies a dramatic decrease of the apparent (bi)polaron mass compared to the undriven case. This effect offers an explanation for dynamic stabilization of superconductivity at high temperatures recently observed in layered cuprates.

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Date submitted: 11 Nov 2016

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